98

(9) (9)

FILED
JUL 14 2008
OFFICE OF THE CLERK
SUPREME COURT, U.S.

Nos. 07-588, 07-589, & 07-597 (Consolidated)

In the
Supreme Court of the United States

**ENTERGY CORP.,
PSEG LLC AND PSEG NUCLEAR LLC, AND
UTILITY WATER ACT GROUP,**

Petitioners,

v.

RIVERKEEPER, INC., *et al.*,

Respondents.

***ON WRITS OF CERTIORARI
TO THE UNITED STATES COURT OF APPEALS
FOR THE SECOND CIRCUIT***

BRIEF OF PETITIONER UTILITY WATER ACT GROUP

KRISTY A. N. BULLEIT
Counsel of Record
HUNTON & WILLIAMS LLP
1900 K STREET, N.W.
WASHINGTON, DC 20006-1109
(202) 955-1547

Counsel for Petitioner

JULY 14, 2008

WILSON-EPES PRINTING CO., INC. – (202) 789-0096 – WASHINGTON, D. C. 20002

QUESTION PRESENTED FOR REVIEW

Whether Section 316(b) of the Clean Water Act, 33 U.S.C. § 1326(b), authorizes the Environmental Protection Agency ("EPA") to compare costs with benefits in determining the "best technology available for minimizing adverse environmental impact" at cooling water intake structures.

PARTIES TO THE PROCEEDING

The Utility Water Act Group ("UWAG") is a petitioner in this Court and was a petitioner in the court of appeals.

PSEG Fossil LLC, PSEG Nuclear LLC, and Entergy Corporation are petitioners in this Court and were petitioners in the court of appeals. Appalachian Power Company and the Illinois Energy Association, which participated below, are *not* parties to this appeal.

The United States Environmental Protection Agency is a respondent in this Court and was a respondent in the court of appeals.

The following parties are respondents in this Court and were petitioners in the court of appeals: Riverkeeper, Inc., Natural Resources Defense Council, Waterkeeper Alliance, Soundkeeper, Inc., Scenic Hudson, Inc., Save the Bay-People for Narragansett Bay, Friends of Casco Bay, American Littoral Society, Delaware Riverkeeper Network,

Hackensack Riverkeeper, Inc., New York/New Jersey Baykeeper, Santa Monica Baykeeper, San Diego Baykeeper, California Coastkeeper, Columbia Riverkeeper, Conservation Law Foundation, Surfrider Foundation, State of Connecticut, State of Delaware, Commonwealth of Massachusetts, State of New Jersey, State of New York, and Commonwealth of Rhode Island.

The industry parties, environmental groups, and States jointly petitioned to intervene in the other petitioners' cases in the court of appeals on August 27, 2004.

Pursuant to Rules 24.1 and 29.6, there is no change to the disclosure statement previously filed by the Utility Water Act Group.

TABLE OF CONTENTS

Page

QUESTION PRESENTED FOR REVIEW i

PARTIES TO THE PROCEEDING i

TABLE OF CITED AUTHORITIES vi

OPINION BELOW 1

JURISDICTION 1

STATUTORY AND REGULATORY PROVISIONS INVOLVED 1

STATEMENT OF THE CASE 2

I. Background 5

A. Cooling Water Intake Structures 5

B. Section 316(b) 11

C. EPA's Long-Standing Approach To § 316(b) Implementation 15

II. The Phase II Rule 16

A. Background 16

B. National Standards 22

C. Site-Specific Standards 23

III. The Decision Below 25

SUMMARY OF THE ARGUMENT 26

ARGUMENT 29

I. EPA's Interpretation of § 316(b) as Authorizing Cost-Benefit Analysis Is Entitled to Deference 31

A. The Second Circuit's Interpretation Is Not Dictated by Statutory Language or Precedent 32

1. The Wording of Section 316(b) Does Not Foreclose Cost-Benefit Analysis 32

2. The Second Circuit's Reliance on *Crushed Stone* Was Misplaced 35

B. The Phase II Rule Embodies the Same Reasonable Policy Choice EPA Has Made for the Past 30 Years 37

II. EPA Reasonably Concluded that § 316(b) Permits Site-Specific Cost-Benefit Consideration 42

A. Other Clean Water Act Sections Do Not Foreclose Site-Specific Cost-Benefit Analysis Under § 316(b) 45

B. The Relationship Between § 316(a) and § 316(b) Supports EPA's Use of Site-Specific Cost-Benefit Analysis Under § 316(b) 48

C. The Record Supports EPA's Reading of § 316(b) 51

1. Impingement and Entrainment Vary Widely Based on Site-Specific Conditions 51

2. The Availability, Effectiveness, and Cost of Intake Technologies Vary Widely By Site 54

CONCLUSION 57

TABLE OF AUTHORITIES

Page

FEDERAL CASES

Alaska Dep't of Envtl. Conservation v. EPA,
540 U.S. 461 (2004) 37

Appalachian Power Co. v. *Train*,
566 F.2d 451 (4th Cir. 1977) 15, 44

Arkansas v. *Oklahoma*,
503 U.S. 9 (1992) 31

Barnhart v. *Walton*,
535 U.S. 212 (2002) 30, 37

Bethlehem Steel Corp. v. EPA,
538 F.2d 513 (2d Cir. 1976) 46

Bragdon v. Abbott,
524 U.S. 624 (1998) 38

Chemical Mfrs. Ass'n v. *NRDC*,
470 U.S. 116 (1985) 30

Chevron U.S.A. Inc. v. NRDC,
467 U.S. 837 (1984) ..... *passim*

City of Columbus v. Ours Garage & Wrecker Serv.,
536 U.S. 424 (2002) 50

ConocoPhillips v. EPA,
(5th Cir., No. 06-60662, *filed* 7/14/06) 17

EPA v. Nat'l Crushed Stone,
449 U.S. 64 (1980) 35, 36, 37

FDA v. Brown & Williamson Tobacco Corp.,
529 U.S. 120 (2000) 29

Hudson Riverkeeper Fund v. Orange & Rockland Utils.,
835 F. Supp. 160 (S.D.N.Y. 1993) 41, 44

Kapral v. United States,
166 F.3d 565 (3d Cir. 1999) 50

Nat'l Cable & Telecomms. Ass'n v. *Brand X Internet Servs.*,
545 U.S. 967 (2005) 30

Nat'l Wildlife Fed'n v. EPA,
286 F.3d 554 (D.C. Cir. 2002) 46

NationsBank of N.C. v. Variable Annuity Life Ins. Co.,
513 U.S. 251 (1995) 29

North Haven Bd. of Ed. v. Bell,
456 U.S. 512 (1982) 37

PSEG Fossil LLC v. Riverkeeper, Inc.,
128 S. Ct. 1867 (2008) 1

Pauley v. *BethEnergy Mines*,
501 U.S. 680 (1991) 30

Riverkeeper, Inc. v. EPA,
358 F.3d 174 (2d Cir. 2004)
(*Riverkeeper I*) ..... *passim*

Riverkeeper, Inc. v. EPA,
475 F.3d 83 (2d Cir. 2007)
(*Riverkeeper II*) 1, 46, 47

Russello v. United States,
464 U.S. 16 (1983) 50

Seacoast Anti-Pollution League v. Costle,
597 F.2d 306 (1st Cir. 1979) 9, 16, 41

Skidmore v. Swift & Co.,
323 U.S. 134 (1944) 38

Smiley v. Citibank (S.D.), N.A.,
517 U.S. 735 (1996) 29, 30

United States Steel Corp. v. Train,
556 F.2d 822 (7th Cir. 1977) 41

United States v. *Pozsgai*,
999 F.2d 719 (3d Cir. 1993) 31

United States v. Ressam,
128 S. Ct. 1858 (2008) 50

EPA ADMINISTRATIVE DECISIONS

In re Dominion Energy Brayton Point, LLC (formerly USGen New England, Inc.) Brayton Point Station, NPDES 03-12, 2006 EPA App. LEXIS 9 (EAB February 1, 2006) 41

In re Pub. Serv. Co. of N.H. (Seabrook Station, Units 1 & 2), 1 E.A.D. 332, 10 Env't Rep. Cas. (BNA) 1257, 1977 EPA App. LEXIS 16, *47 (June 10, 1977), *rev'd on other grounds and remanded, Seacoast Anti-Pollution League v. Costle*, 572 F.2d 872 (1st Cir. 1978) 9

In re Pub. Serv. Co. of N.H. (Seabrook Station, Units 1 and 2), 1 E.A.D. 455, 1978 EPA App. LEXIS 17 (1978), *aff'd, Seacoast II*, 597 F.2d at 311 40

STATE CASE

In the Matter of Riverkeeper, Inc. v. Johnson, 2008 NY Slip Op. 5608, 2008 N.Y. App. Div. LEXIS 5503 (N.Y. App. Div. 3d Dep't June 19, 2008) 9

STATE ADMINISTRATIVE DECISIONS

Athens Generating Co., 2000 WL 33341184 (N.Y. Dep't Envtl. Conservation June 2, 2000) 41

In the Matter of Dynegy Northeast Generation, Inc. (Danskammer Generating Station), 2006 N.Y. ENV LEXIS 23 (Deputy Commissioner, NY Dep't Envtl. Conservation May 24, 2006) 41

STATUTES

16 U.S.C. §§ 4701, 4712 (1994) 10

16 U.S.C. §§ 4701-51 (1997) 10

28 U.S.C. § 1254(1) 1

33 U.S.C. § 1311 ..... *passim*

33 U.S.C. § 1311(b)(2) 35

33 U.S.C. § 1311(c) 35, 36

33 U.S.C. § 1311(g) 47

33 U.S.C. § 1314 ..... *passim*

33 U.S.C. § 1316 ..... *passim*

33 U.S.C. § 1316(b)(1)(B) 35

33 U.S.C. § 1326(a) ..... *passim*

33 U.S.C. § 1326(b) ..... *passim*

33 U.S.C. § 1371(c) 14

RULES

U.S. Sup. Ct. R. 24.1 ii

U.S. Sup. Ct. R. 29.6 ii

REGULATIONS

40 C.F.R. §§ 125.80-125.89 16

40 C.F.R.§ 125.83 33

40 C.F.R. § 125.94(a)(5)(ii). 23, 25

40 C.F.R. § 125.94(b)(1) 22

40 C.F.R. § 125.94(b)(2) 22

40 C.F.R. § 125.95(a) 25

40 C.F.R. § 125.95(b) 24

40 C.F.R. § 125.95(b)(6)(i) 24

40 C.F.R. § 125.95(b)(6)(ii) 24

40 C.F.R. § 125.95(b)(6)(ii)((B) 24

40 C.F.R. § 125.95(b)(6)(ii)(C) 24

40 C.F.R. § 125.95(b)(6)(ii)(D) 24

40 C.F.R. § 125.95(b)(7)(ii) 53

40 C.F.R. § 125.99(a)(ii) 55

40 C.F.R. Part 125 Subpart J 2

OTHER AUTHORITIES

41 Fed. Reg. 17,387 (Apr. 26, 1976) 15

41 Fed. Reg. 17,387-90 (Apr. 26, 1976) 38

41 Fed. Reg. 17,388 (Apr. 26, 1976) 15, 38, 39

41 Fed. Reg. 17,389 (Apr. 26, 1976) 38

66 Fed. Reg. 65,338 (Dec. 18, 2001) 16

68 Fed. Reg. 13,527 (Mar. 19, 2003) 56

68 Fed. Reg. 13,541 (Mar. 19, 2003) 42

68 Fed. Reg. 36,754 (June 19, 2003) 16

69 Fed. Reg. 41,575-693 (July 9, 2004) ..... *passim*

71 Fed. Reg. 35,006 (June 16, 2006) 17

71 Fed. Reg. 35,017 (June 16, 2006) 17

72 Fed. Reg. 37,459 (July 10, 2007) 10

1 *A Legislative History of the Water Pollution Control Act Amendments of 1972* (hereinafter *Leg. Hist.*) 263 (93d Cong. 1st Sess.) (1973) 13, 14

American Heritage Dictionary of the English Language (4th ed. 2000) 34

Merriam-Webster's Collegiate Dictionary (10th ed. 1996) 34

In re Central Hudson Gas & Elec. Corp., et al. Opinion No. 63, July 29, 1977, 1977 WL 28250 (E.P.A.G.C.) 40, 49

EPA, *Draft Guidance for Evaluating the Adverse Impact of Cooling Water Intake Structures on the Aquatic Environment: Section 316(b)* P.L. 92-500 (May 1, 1977) 15, 39, 40

Executive Order 12866 21

NERC 2007 Long-Term Reliability Assessment 2007-2016 at 10, 97 (available at ftp://ftp.nerc.com/pub/sys/all_updl/docs/pubs/LTRA2007.pdf or at http://www.nerc.com/~filez/rasreports.html) 11

OPINION BELOW

The opinion of the U.S. Court of Appeals for the Second Circuit (Pet. App. 1a-94a)[1] is reported at *Riverkeeper, Inc. v. EPA*, 475 F.3d 83 (2d Cir. 2007) ("*Riverkeeper II*").

JURISDICTION

The Second Circuit entered judgment on January 25, 2007, and denied petitions for rehearing and rehearing *en banc* on July 5, 2007. Timely petitions for certiorari were filed on November 2, 2007 following an extension of time. Certiorari was granted April 14, 2008, *PSEG Fossil LLC v. Riverkeeper, Inc.*, 128 S. Ct. 1867, 1868 (2008). The jurisdiction of this Court is invoked under 28 U.S.C. § 1254(1).

STATUTORY AND REGULATORY PROVISIONS INVOLVED

This case concerns § 316(b) of the Federal Water Pollution Control Act, commonly known as the Clean Water Act ("CWA" or the "Act"), 33 U.S.C. § 1326(b). Section 316(b) states:

---

[1] Citations to "Pet. App." refer to the Appendix to the Petition for Certiorari filed by Entergy Corp. in No. 07-588. "J.A." refers to the Joint Appendix. There is also a "UWAG Appendix" attached to this brief.

> Any standard established pursuant to section 1311 of this title or section 1316 of this title and applicable to a point source shall require that the location, design, construction and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impact.

This provision, as well as parts of CWA §§ 301, 304, and 306, 33 U.S.C. §§ 1311, 1314, 1316, are reproduced in the addendum to this brief and at Pet. App. 97a-113a. The rule at issue here (*National Pollutant Discharge Elimination System – Final Regulation to Establish Requirements for Intake Structures at Phase II Facilities*, 69 Fed. Reg. 41,575-693 (July 9, 2004) ("Phase II" rule)) was codified at 40 C.F.R. Part 125, Subpart J, and is reproduced at Pet. App. 122a-593a.

STATEMENT OF THE CASE

This case concerns the regulations for existing power plant cooling water intake structures ("intake structures" or simply "intakes") that EPA adopted under § 316(b) of the Clean Water Act, 33 U.S.C. § 1326(b). More specifically, this case focuses on whether EPA may use cost-benefit analysis to develop national intake structure standards for existing power plants and allow permit writers to use cost-benefit analysis on a site-specific basis in selecting the "best technology available" ("BTA") for

"minimizing" "adverse environmental impact" as required by § 316(b).

For the past 30 years, EPA has implemented § 316(b) case-by-case, taking into account costs and benefits in deciding which intake technology is the best for minimizing adverse environmental impact at a particular site. In developing the rule at issue here, EPA's deliberations were informed by this history, and by its understanding of the biological and technological complexities involved in § 316(b) implementation, especially at existing facilities. After nine years of deliberation, it developed the "Phase II" rule, which attempts to streamline the BTA selection process by setting national standards based on the estimated performance of a suite of commercially available intake structure technologies. The rule requires hundreds of existing steam electric power plants to use one or more of those technologies to achieve national standards for reducing the degree to which aquatic organisms are trapped against ("impinged" by) or drawn through ("entrained" by) cooling water intake structures.

EPA selected this approach after carefully considering many alternatives, including requiring some or all existing Phase II facilities that have once-through or "open-cycle" cooling systems to replace them with recirculating systems. Recirculating or "closed-cycle" facilities reduce the amount of water withdrawn, but only at a substantial cost both in environmental and economic terms. EPA looked at those environmental and economic costs, compared them to the additional

reduction in impingement and entrainment that closed-cycle cooling might achieve, and concluded that requiring closed-cycle cooling was not BTA.

EPA recognized, however, that determining what is necessary to minimize adverse environmental impacts can necessitate a site-specific inquiry of the type it had previously required for all facilities. Therefore, the rule also includes a provision authorizing alternative standards for a particular site where the facility can demonstrate that the overall costs of achieving the national standards are substantially greater than the overall benefits.

The Second Circuit rejected this reasonable approach, concluding that EPA is not permitted to weigh costs and benefits in implementing § 316(b). For the reasons given in the separate brief filed by Entergy Corp., PSEG Nuclear, and PSEG Fossil in the consolidated cases 07-588 and 07-589 ("Entergy/PSEG Brief"), EPA's conclusion that § 316(b) permits some comparison of marginal environmental benefits with the costs of achieving them, both at the national level and at particular sites, is the only reasonable reading of the Act and thus should have been upheld under "step one" of the analysis required by *Chevron U.S.A. Inc. v. NRDC*, 467 U.S. 837 (1984). In addition, as explained in the Entergy/PSEG Brief and more fully herein, the Act is at least ambiguous as to whether EPA may compare costs and benefits under § 316(b). EPA's reading of the Act to permit such comparisons, both nationally and at particular sites, is wholly reasonable and thus

should have been upheld under "step two" of the *Chevron* analysis. In either case the decision below is wrong and must be reversed.

I. Background

A. Cooling Water Intake Structures

EPA has always understood that regulating intake structures involves myriad complex, site-specific environmental, energy, and economic trade-offs that can appropriately be evaluated by using cost-benefit analysis. For example, the Agency has long understood that the "environmental impact" of an intake structure depends partly, but only partly, on the type of cooling system it serves.

Steam electric power plants come in different sizes and configurations, but they all operate on the same principle: water is boiled to make steam, which drives a turbine, which powers an electric generator. All steam electric plants need a way to condense the steam back to water. Most use cooling water for that purpose.[2]

---

[2] A few employ "dry cooling," which uses natural or mechanical air drafts to remove heat and requires little or no water. Pet. App. 270a (69 Fed. Reg. 41,608). Even for new facilities, where it would be easiest and cheapest to install dry cooling systems, EPA did not require them, because they are costly, reduce water intake only minimally compared to closed-cycle wet cooling, increase air pollution and energy penalties, and have other disadvantages. In ruling on challenges to EPA's earlier "Phase I" rule for new facilities (66 Fed. Reg. 65,256

(continued...)

The amount of cooling water withdrawn from a waterbody by a steam electric plant depends on a variety of factors, one of which is the type of condenser cooling system. There are two basic types of "wet" condenser cooling systems: open-cycle and closed-cycle. Open-cycle systems pass water through the condenser only once before returning virtually all the water to its source, albeit at a higher temperature. Closed-cycle systems recirculate the heated water from the condenser through an evaporative cooling structure (typically a cooling tower, pond, or lake) two or more times before the build-up of salts in the water requires the system to "blow down" (*i.e.*, discharge). Closed-cycle systems withdraw from 70% to 98% less water than open-cycle systems, depending on the water's salinity level, Pet. App. 240a (69 Fed. Reg. 41,601 n.44), but they evaporate (*i.e.*, consume) most of the water withdrawn, returning very little to its source.

EPA also understood that the amount of water withdrawn does not alone determine the "environmental impact" that a cooling water intake structure will have, even if impact is gauged solely by intake-induced impingement and entrainment mortality. Local characteristics of the waterbody

---

(Dec. 18, 2001)), the Second Circuit upheld EPA's decision. *Riverkeeper, Inc. v. EPA*, 358 F.3d 174, 182 n.5 (2d Cir. 2004) (*"Riverkeeper I"*). For *existing* facilities, no party to this case has disputed EPA's determination that dry cooling is not BTA.

and its fish are just as important, as are the characteristics of the intake structure.[3]

In formulating the Phase II rule, EPA identified 20 distinct ecosystem and species characteristics and 18 intake features that influence impingement and entrainment losses.[4] These factors interact to determine the numbers and types of healthy organisms near the intake at any given time; the likelihood those organisms will survive an encounter with the intake; and the consequences of any losses that occur. Which factors are most important varies by site.

Indeed, EPA's record demonstrates that the types and numbers of organisms impinged and entrained over time and among different sites could vary tremendously – for some species, by factors in excess of *40,000*.[5]

---

[3] *See, e.g.*, Pet. App. 216a, 226a-227a, 235a (69 Fed. Reg. 41,596, 41,598, 41,600).

[4] EPA, *Economic and Engineering Analysis* (July 20, 2000) ("EPA EEA"), Ch. 11, p. 11-4, Table 11-1, Docket EPA W-00-03, DCN:1-5046-PR, incorporated into Docket EPA-HQ-OW-2002-0049 by reference at DCN:4-0000), J.A. 165-67.

[5] *See, e.g.*, EPA EEA 11-13, Table 11-11 (showing 115,384-fold variation in annual impingement of Atlantic croaker by eight estuarine plants); 11-13, Table 11-10 (showing 3,515-fold variation in entrainment of Atlantic tomcod eggs and larvae by three estuarine facilities); 11-10, Table 11-6 (showing 1,033-fold variation in annual entrainment of alewife by five Great Lakes facilities); 11-9, Table 11-5 (showing 18,750-fold

(continued...)

This is not to say that impingement and entrainment rates at the lower end of the range are necessarily trivial. But the record shows that EPA had good cause to believe that impingement and entrainment rates vary substantially from site to site and may not be as significant at some sites as at the handful of large facilities located on sensitive waterbodies that the Agency presented as examples of power plant intake structure effects.[6]

EPA also understood that not all organisms that become impinged or entrained are harmed by the intake structure. For example, whether an organism's encounter with an intake causes harm, even to that individual, depends on whether the organism is alive on arrival. Many are not, due to the enormously high natural mortality to which

---

variation in annual impingement of freshwater drum by four lake or reservoir facilities); 11-6, Table 11-2 (showing 1,101-fold variation in entrainment of sunfish eggs, larvae, and juveniles by five riverine facilities); 11-15, Table 11-13 (showing 19-fold variation in impingement of queenfish by two ocean facilities).

[6] *Compare* Pet. App. 175a-181a (69 Fed. Reg. 41,587-88) *with* UWAG Comments on Proposed § 316(b) Rule for New Facilities 81-87 (Nov. 9, 2000) ("UWAG Phase I Comments"), incorporated by reference per DCN:4-0000 (discussing issues raised by EPA reliance on information for a small group of power plants to derive its estimate of national impacts); *see also* UWAG Comments on Proposed § 316(b) Rule for Existing Facilities, Public Comment 1.041 (Aug. 7, 2002) 15-17 ("UWAG Phase II Comments") (describing site-specific factors that affect impingement and entrainment levels).

aquatic organisms are subject.[7] Equally important, many organisms will survive their encounter with the intake, resulting in no harm even to the individual.[8]

The broader implications of those individual losses depend on the species affected, the size of the population from which the losses occur, and the

---

[7] *See, e.g.* EPRI Comments on Proposed § 316(b) Rule for Existing Facilities, Public Comment 1.074 (Aug. 7, 2002) 9, 16; UWAG Phase II Comments at 15. High mortality in wild populations is natural, and due to compensation and other demonstrated natural mechanisms, increased mortality can result in increased production. UWAG Phase I Comments at 32 & App. B; see also EPA's Response to Public Comment, Author Version, DCN:6-5049A ("EPA's Response to Comment") 689-90; *Seacoast Anti-Pollution League v. Costle*, 597 F.2d 306, 309 (1st Cir. 1979) ("*Seacoast II*"); *In re Pub. Serv. Co. of N.H. (Seabrook Station, Units 1 & 2)*, 1 E.A.D. 332, 10 Env't Rep. Cas. (BNA) 1257, 1977 EPA App. LEXIS 16, *47 (June 10, 1977), *rev'd on other grounds and remanded, Seacoast Anti-Pollution League v. Costle*, 572 F.2d 872 (1st Cir. 1978) (loss of Mya clam larvae would be 100,000,000,000, but this was at most about 5% of the standing crop of Mya clam in the area, and a single adult clam releases several million eggs per spawning and may spawn several times a years).

[8] Pet. App. 234a-235a (69 Fed. Reg. 41,600) (citing differences in impingement survival rates among species as basis for setting performance standard ranges). *See also In the Matter of Riverkeeper, Inc. v. Johnson*, 2008 NY Slip Op. 5608, 2008 N.Y. App. Div. LEXIS 5503 (N.Y. App. Div. 3d Dep't June 19, 2008) (upholding agency consideration of entrainment survival in setting BTA requirements).

presence of other significant stressors. Some species are so abundant that intake-related losses, even if large in the abstract, are unlikely to affect the species' well-being.[9] Other species are considered a nuisance by state and federal fisheries managers, who do their best to extirpate them.[10]

In short, the extent to which an intake structure causes impingement or entrainment mortality at a particular site and the environmental relevance of any such mortality are highly site-specific. Equally important, such impacts are not the only "environmental impacts" associated with the technology choices under § 316(b). For example, closed-cycle cooling systems can create other adverse environmental impacts such as noise, salt drift, ice, fog, elimination of favorable thermal habitat, and others of which EPA is well aware. *See infra* at 20. Most notably, because retrofitted closed-cycle systems are less efficient than once-through systems

---

[9] *See, e.g.*, UWAG Phase I Comments at 172-73 (evaluation of effects of entrainment of Atlantic mackerel by a Northeastern plant showed that annual entrainment of Atlantic mackerel eggs loss equaled less than one millionth the number spawned yearly by that species).

[10] *See, e.g.*, Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990, 16 U.S.C. §§ 4701, 4712 (1994); National Invasive Species Act of 1992, 16 U.S.C. §§ 4701-51 (1997); 72 Fed. Reg. 37,459 (July 10, 2007) (U.S. Fish and Wildlife Service lists silver carp as "injurious fish" because they carry pathogens, compete with native species, and degrade habitat).

at removing heat, they extract a significant, permanent "energy penalty," resulting in less electricity per unit of fuel. Pet. App. 254a-261a (69 Fed. Reg. 41,605-06). This means each affected power plant would have a lower output because of the retrofit. This raises serious concerns about the nation's electric supply.[11] The costs of various technological alternatives also are highly site-specific, as EPA recognized. *See, e.g.*, 69 Fed. Reg. 41,670-75 (Appendix A). The Agency made an attempt to capture those costs in its analysis, but it recognized that the assumptions it made might not be correct for any given case. Pet. App. 435a (69 Fed. Reg. 41,647).

B. Section 316(b)

The Agency found legal authority for evaluating costs and benefits at both the national

---

[11] Indeed, closed-cycle cooling retrofits, if required, could have a very negative impact on the reliability of the electrical supply system in the United States. The North American Electric Reliability Corp. ("NERC") is charged with overseeing the reliability of the nation's electric supply. NERC's recent assessment of long-term energy found that long-term capacity margins already are inadequate in many regions, and retrofitting existing power plants with closed-cycle cooling pursuant to § 316(b) could result in a 12 percent reduction in available capacity margin, thus compounding an already serious reliability picture. See NERC, 2007 Long-Term Reliability Assessment 2007-2016 at 10, 97 (available at ftp://ftp.nerc.com/pub/sys/all_updl/docs/pubs/LTRA2007.pdf or at http://www.nerc.com/~filez/rasreports.html).

and site-specific levels in the language and legislative history of the statute. Pet. App. 150a-157a (69 Fed. Reg. 41,582-83); Pet. App. 253a (69 Fed. Reg. 41,604); Pet. App. 348a-354a (69 Fed. Reg. 41,625-26).

As EPA recognized, among the provisions of the Clean Water Act that rely on technology to achieve an outcome, § 316(b) is unique. It is the only provision that applies to structures that withdraw water, rather than to discharges that add pollutants to water. Thus, its subject – the location, design, construction, and capacity of cooling water intake structures – is different from the subject of the statute's other technology-based provisions. Pet. App. 156a-157a (69 Fed. Reg. 41,583).

Equally important, unlike the technology-based program for point sources, the goal of which is to "eliminate" pollutant discharges, § 316(b) has a broadly stated objective of "minimizing adverse environmental impact." Section 316(b) does not specify the impacts on which EPA must focus, does not identify the threshold at which impacts are considered "adverse," and does not require that adverse impacts be eliminated wherever it is technologically possible to do so.

There are other differences as well. Section § 316(b) refers to but is structurally removed from the technology-based provisions of §§ 301 and 306, which the Entergy/PSEG Brief describes in some detail. Unlike those sections, it does not require development of several tiers of uniform national

standards for categories and classes of industrial discharges. In fact, § 316(b) does not require categorical or numeric performance standards of any kind.

Section 316(b) does not reside with the Act's technology-based provisions but in a separate section of the Act that, as its title states, addresses "Thermal Discharges." 33 U.S.C. § 1326. The cornerstone of the section is § 316(a), which affords relief from otherwise applicable technology or water quality-based effluent limits for heat where the discharger can demonstrate that alternate thermal limits will ensure the "protection and propagation of balanced, indigenous population of shellfish, fish and wildlife in and on the water to which the discharge is made."[12] Pet. App. 59a, n.27.

By its terms, § 316(b) does not require controls based solely on what technology can achieve, without regard to the environmental outcome. Rather, as the Agency concluded, § 316(b) authorizes EPA "to

---

[12] Section 316 was originally included in the House-passed water pollution control bill because "the arguments which justified a basic technological approach to water quality control did not apply in the same manner to the discharges of heat." 1 *A Legislative History of the Water Pollution Control Act Amendments of 1972* (hereinafter *Leg. Hist.*) 263 (93d Cong. 1st Sess.) (1973). Among the reasons offered in support were the relatively local, non-accumulative, and temporary effects of heat in comparison to other pollutants and the potential for thermal discharges in some cases to *enhance* the aquatic environment. *Id.* at 263-64, 267-28.

consider not only technologies but also their effects on and benefits to" the environment. Pet. App. 157a (69 Fed. Reg. 41,583).

Although legislative history on § 316(a) abounds, there is relatively little on § 316(b). Section § 316(b) appeared for the first time in the Conference Committee Report.[13] *See Riverkeeper I* at 186 n.12. The only substantive comment was offered by one of the House floor managers, Representative Don Clausen (R. Calif.), who explained that § 316(b) "is intended to be interpreted to mean the best technology available commercially at an economically practicable cost." 1 *Leg. Hist.* at 264; Pet. App. 252a (69 Fed. Reg. 41,604). This brief discussion places § 316(b) within the tradition of §§ 301, 304, and 306, all of which authorize EPA to weigh costs and benefits.

Thus, while § 316(b) refers to and therefore logically should be read in conjunction with §§ 301, 304, and 306, both its subject (intake structures) and its object (minimizing adverse environmental impacts) are markedly different in ways that EPA

---

[13] Indeed, to the best of our knowledge, the only other references to cooling water withdrawals occurred during the debate over § 511(c), 33 U.S.C. § 1371(c), which limits the applicability of the National Environmental Policy Act to specified federal actions under the Clean Water Act. 1 *Leg. Hist.* at 194-98 (Statement of Senator Buckley) and 198-200 (Senator Muskie). (Section 511(c) is in the appendix to this brief.)

was obliged to consider when interpreting and implementing that provision. The Second Circuit itself recognized this in its earlier decision, largely upholding the Phase I § 316(b) rule for new facilities. *See Riverkeeper I* at 193 (recognizing that "intake structures are in a class by themselves").

C. EPA's Long-Standing Approach To § 316(b) Implementation

For over 30 years, EPA has read § 316(b) to authorize permit writers to select BTA on a site-specific basis and to weigh costs and benefits in doing so. The Agency's early rules relied exclusively on site-specific decision-making. J.A. 44 (41 Fed. Reg. 17,387, 17,388 (Apr. 26, 1976). Those rules were set aside on procedural grounds a year later in *Appalachian Power Co.* v. *Train*, 566 F.2d 451, 457 (4th Cir. 1977).

During the next 30 years, until EPA promulgated the rules at issue here, EPA and state permit writers successfully relied on Agency guidance that required permit writers to select BTA site-by-site, taking into account the relationship between costs and benefits.[14] That guidance

---

[14] EPA, *Draft Guidance for Evaluating the Adverse Impact of Cooling Water Intake Structures on the Aquatic Environment: Section 316(b)* P.L. 92-500 (May 1, 1977) ("1977 draft guidance"), DCN:1-5045-PR, incorporated into Docket EPA-HQ-OW-2002-0049 by reference at DCN:4-0000), also available at http://www.epa.gov/waterscience/316b/files/1977AEIguid.pdf.

provided permit writers with a general framework for evaluating the potential environmental impacts of existing intake structures, deciding whether those impacts are adverse, and, if they are, selecting the modifications to the structure's location, design, construction, or capacity that best minimizes those impacts at a cost not "wholly disproportionate" to the benefit gained. Pet. App. 161a (69 Fed. Reg. 41,584). The approach embodied in EPA's guidance was approved by the First Circuit in *Seacoast II*, 597 F.2d at 311, and followed in numerous administrative decisions thereafter.

II. The Phase II Rule

A. Background

In the mid-1990s, to resolve a lawsuit filed by environmental groups, EPA entered a consent decree obligating it to initiate § 316(b) rulemaking proceedings, which it did in three phases.[15] The

---

[15] EPA's Phase I rule, adopted in 2001, governs new facilities of all kinds, including new steam electric power plants. 66 Fed. Reg. 65,338 (Dec. 18, 2001), as amended at 68 Fed. Reg. 36,754 (June 19, 2003), codified at 40 C.F.R. §§ 125.80-125.89. The Second Circuit reviewed and largely upheld those regulations, including a variance provision allowing consideration of local environmental impacts. *Riverkeeper I* at 174. For a detailed discussion of the Second Circuit's decision in *Riverkeeper I*, *see* Entergy/PSEG Brief, Statement of the Case ("SOC") § A.5.

Phase III encompasses existing power plants and industrial facilities not subject to Phase II. *See* Pet. App. 159a

(continued...)

"Phase II" rule at issue here resulted from that process. Pet. App. 122a-593a (69 Fed. Reg. 41,576). The rule applies to cooling water intake structures at approximately 540 large steam electric generating plants built before January 17, 2002. EPA estimated that Phase II facilities produce about 50% of the nation's electric energy. Pet. App. 203a (69 Fed. Reg. 41,593); EPA, *Economic and Benefits Analysis for the Final Section 316(b) Phase II Existing Facilities Rule* A3-12-13 (2004), DCN:6-0002.

EPA's Phase II rule embodies both site-specificity and cost-benefit principles, but with two significant innovations. First, to promote greater consistency and ease administrative burdens on the permit writers responsible for implementing § 316(b), the Phase II rule establishes new nationally applicable performance standard ranges for reducing impingement mortality and entrainment[16] and

---

(69 Fed. Reg. 41,583). For these facilities, EPA has determined that uniform national standards are not the most effective way to ensure compliance with § 316(b), opting instead to continue regulating exclusively case-by-case. 71 Fed. Reg. 35,006 (June 16, 2006). The Agency based this determination on its judgment that "the monetized costs associated with the primary option under consideration are wholly disproportionate to the monetized environmental benefits." 71 Fed. Reg. 35,017 (June 16, 2006). Environmental groups have challenged that determination in a case now pending in the Fifth Circuit. *ConocoPhillips v. EPA*, (5th Cir., No. 06-60662, *filed* 7/14/06) (stayed pending outcome of Phase II appeal).

[16] Although EPA recognized that entrained organisms sometimes survive passage through the cooling system, it also

(continued...)

imposes new, more uniform procedural requirements. Those performance ranges and procedural requirements, described in greater detail below, provide a consistent framework for selecting the "most effective and efficient approach and technologies for minimizing adverse environmental impact" at each site, at a cost that is "economically practicable." Pet. App. 226a, 356a (69 Fed. Reg. 41,598, 41,627).

Second, the Phase II rule does not require a threshold evaluation of whether the type and level of impact occurring at a site is truly "adverse" in any meaningful sense. Instead, it addresses that issue through an optional site-specific compliance alternative. That alternative, described in greater detail below, authorizes establishment of alternative performance standards where the overall costs of achieving the national standards exceed the overall benefits.

---

recognized that entrainment survival rates are very site-specific. Pet. App. 325a-327a (69 Fed. Reg. 41,620). Therefore, for purposes of setting national standards, the Agency assumed that no survival occurs and established standards for entrainment *per se*, rather than for intake-induced entrainment mortality. However, as discussed below, it allowed consideration of facility-specific entrainment survival through the site-specific cost-benefit provision. Throughout this brief, we will refer to "impingement," "impingement mortality," "entrainment," and "entrainment mortality" as the context demands.

For purposes of setting national standards in the Phase II rule, the Agency chose not to draw distinctions (though it could have) based on the type of species affected, the life stages affected, the size of the losses, or the effects on the ecosystem. Instead, it took a precautionary approach, based on its national findings about the likely benefits of reducing impingement mortality and entrainment, the acceptability of the other environmental and energy impacts that would impose, and the associated costs of achieving the required reductions. Pet. App. 249a-252a (69 Fed. Reg. 41,603-04); *see also* 247a-249a (69 Fed. Reg. 41,603). To avoid irrational or counterproductive results at the site-specific level, however, EPA included provisions allowing site-specific standards based on actual costs and benefits. *Id.*

Besides the regulatory option it chose, EPA considered a number of others. Several were wholly site-specific. EPA rejected these in favor of an approach that promoted consistency, reduced administrative burdens, and decreased the likelihood of disputes and delay in the permit process. Pet. App. 268a-269a (69 Fed. Reg. 41,608).

It also considered and rejected several options requiring all or some existing facilities with once-through cooling to retrofit closed-cycle systems, which would reduce flow substantially and, EPA estimated, achieve a comparable reduction in

entrainment and, in some cases, impingement.[17] Pet. App. 287a-289a (69 Fed. Reg. 41,612). Although recognizing that the reduction in impingement and entrainment achievable by closed-cycle cooling could be greater in some cases than was achievable from technologies directly applicable to the intake structure, such as barriers, behavioral devices, or screening, EPA chose not to base the Phase II standards on closed-cycle cooling. Pet. App. 254a-273a (69 Fed. Reg. 41,605-09).

EPA based this choice partly on its conclusion that "other technologies approach the performance of [closed-cycle cooling]," Pet. App. 255a (69 Fed. Reg. 41,605), at about one-ninth the cost of closed-cycle cooling. *Compare* Pet. App. 256a (69 Fed. Reg. 41,605) (total social cost for cooling towers about $3.5 billion per year, not counting land acquisition) *with* Pet. App. 450a (69 Fed. Reg. 41,650) (total social cost for Phase II rule of $389 million per year). Other factors also influenced EPA's decision: the huge plant-specific and national cost of retrofitting existing facilities with closed-cycle cooling; the energy penalties associated with retrofitting existing

---

[17] EPA found that entrainment is related to flow, and impingement is related to a combination of flow, intake velocity, and fish swim speed, and that installing flow reduction technologies would result in a similarly high reduction in impinged and entrained organisms. Pet. App. 288a-289a (69 Fed. Reg. 41,612).

facilities;[18] increases in air emissions from additional generation needed to compensate for such penalties; the fact that retrofitting might be impossible at some plants; and other adverse environmental effects, such as fog, icing, and noise. *See* Pet. App. 255a-259a (69 Fed. Reg. 41,605-06).

In other words, the Agency considered overall costs, weighed them against overall benefits, and concluded that the approach it chose was the best way to minimize adverse environmental impacts overall. Pet. App. 169a (69 Fed. Reg. 41,586).

In fact, EPA adopted a Phase II rule that would produce benefits at a relatively high cost. The Agency performed a cost-benefit analysis of the rule, as required by Executive Order 12866. That analysis estimated that the costs of the Agency's chosen alternative exceeded the quantifiable benefits by almost 5-to-1. Pet. App. 526a (69 Fed. Reg. 41,666) (total pre-tax social costs of $389.2 million and total use benefits of $82.9 million).

---

[18] For existing facilities, the Department of Energy estimated that retrofitting closed-cycle cooling at existing facilities would impose an energy penalty ranging from 2.4 to 4 percent (or, at one plant, over 5 percent) of existing generating capacity, requiring the construction of approximately 20 additional 400-megawatt power plants to replace that lost capacity. Pet. App. 257a-258a (69 Fed. Reg. 41,605). The "net effect" of the energy penalty would be more consumption of fossil fuel, which in turn increases emissions of carbon dioxide, sulfur dioxide, NOx, mercury, and other pollutants. Pet. App. 258a (69 Fed. Reg. 41,605).

B. National Standards

The rule sets national standards requiring all Phase II facilities to substantially reduce the "impingement mortality" that can occur when aquatic organisms become trapped against the intake structure. EPA found that "best technology" varies among sites but is reflected by national performance standards that require all Phase II plants to reduce impingement mortality by 80-95% from an uncontrolled or "calculation baseline" level. Pet. App. 560a (40 C.F.R. § 125.94(b)(1)).

The Phase II rule also requires some facilities to reduce "entrainment" of very small aquatic organisms (usually eggs and very small larvae) that are drawn into the facility's cooling system through the intake. The Agency concluded that entrainment levels could be significant enough to warrant regulation at facilities that (1) have a "capacity utilization rate" of 15% or greater, and (2) are located on oceans, estuaries, tidal rivers or the Great Lakes, or are located on a freshwater stream or river (but only if the plant has a design flow of 5% or greater of the mean annual flow of river or stream). Pet. App. 229a-234a (69 Fed. Reg. 41,599-600). These facilities must reduce entrainment 60-90% from the calculation baseline. Pet. App. 560a (40 C.F.R. § 125.94(b)(2)). For other facilities, the Agency decided that the risks from entrainment were not sufficient to justify additional controls – a decision that no party challenged.

The Agency focused on impingement mortality and entrainment as a "quick, certain, and consistent metric for determining performance at Phase II existing facilities." Pet. App. 168a-188a (69 Fed. Reg. 41,586-90). But because EPA recognized that the availability, performance, cost, and environmental effects of intake technology alternatives varied significantly by site, the Agency did not base its performance standards on a single technology. Pet. App. 216a, 226a, 234a-235a (69 Fed. Reg. 41,596, 41,598, 41,600). Instead, the standards are based on a suite of commercially available technologies, including fine- and wide-mesh screens, aquatic filter barriers, barrier nets, and fish return systems. Pet. App. 226a-228a (69 Fed. Reg. 41,598-99).

C. Site-Specific Standards

To provide a "level of flexibility comparable" to its long-standing site-specific approach, EPA also included a provision allowing permit writers to set site-specific alternative performance standards where a facility can demonstrate that the overall costs of achieving the national standards exceed the overall benefits. Pet. App. 269a (69 Fed. Reg. 41,608); Pet. App. 556a-560a (40 C.F.R. § 125.94(a)(5)(ii)). Alternate standards set under this provision must be as close as practicable to the national standard without resulting in significantly greater costs than benefits.

To qualify, a facility must submit a "Benefits Valuation Study" fully valuing the impacts of

impingement mortality (and, where applicable, entrainment) at its site, and providing a quantitative and qualitative assessment of all of the benefits (recreational, commercial, and ecological) of achieving applicable national standards. Pet. App. 579a-581a (40 C.F.R. § 125.95(b)(6)(ii)). Facilities subject to entrainment standards may document entrainment survival and factor that survival into the Benefits Valuation Study. Pet. App. 579a (40 C.F.R. § 125.95(b)(6)(ii)((B)). In fact, this is the only point in the rule at which entrainment survival can be considered. To avoid any bias in the benefits estimate, the rule authorizes a permit writer to require an applicant to provide at its own expense an independent peer review of the Benefits Valuation Study. Pet. App. 580a (40 C.F.R. § 125.95(b)(6)(ii)(D)). The rule also requires the applicant to explain how the uncertainties involved in benefits estimation will be identified and factored into the assessment. Pet. App. 579a (40 C.F.R. § 125.95(b)(6)(ii)(C)).

An applicant for alternate limits also must submit a "Comprehensive Cost Evaluation Study." The rule does not limit the types of costs that can be considered to only those economic costs borne by the permittee. It simply requires submission of "engineering cost estimates" (Pet. App. 578a-579a (40 C.F.R. § 125.95(b)(6)(i)), an undefined term that is broad enough to encompass estimates for a variety of different costs, whether borne by the facility, society, or the environment. Ultimately, according to the rule, the determination regarding any site-specific alternative limitation must be made based

on "reliable, scientifically valid cost and performance data" submitted by the facility "and any other information the Director deems appropriate." Pet. App. 559a (40 C.F.R. § 125.94(a)(5)(ii)).

All of this information must be submitted as part of the facility's "Comprehensive Demonstration Study," which becomes part of its NPDES permit renewal application. Pet. App. 564a-582a (40 C.F.R. § 125.95(a), (b)). As such, it becomes part of the public record, available for review and comment.

III. The Decision Below

The Second Circuit invalidated the Phase II rule based on its own highly selective interpretation of § 316(b) and §§ 301 and 306, to which § 316(b) refers.[19] Although the circuit court stated that EPA may consider technology cost and must consider technology performance in selecting BTA at the national level, it held that § 316(b) forbids any comparison of the two. Pet. App.20a-33a. Instead, EPA must select the technology that achieves the greatest reduction in impingement mortality and entrainment, unless the Agency finds that the industry cannot "reasonably bear" its cost. Pet. App. 26a-27a. The court also prohibited EPA from allowing site-specific variation from the national standards based on cost-benefit evaluation, reasoning that weighing costs and benefits is

---

[19] For a detailed discussion of the basis for the Second Circuit's decision, see Entergy/PSEG Brief, SOC § B.

generally prohibited and, applied on a site-specific basis, would involve consideration of forbidden "water quality" factors. Pet. App. 56a-60a.

The court agreed that EPA may consider energy and non-water quality impacts in selecting BTA (Pet. App. 26a n.12). But its decision strongly suggests that EPA may not use any form of economic cost-benefit analysis as a means of balancing those competing factors and selecting the alternative that best "minimizes adverse environmental impact" overall, even though the definition of "cost-benefit analysis" cited by the court suggests that is a task for which such an analysis is ideally suited. *Cf.* Pet. App. 23a n.10 (citing OMB circular describing cost-benefit analysis as a "systematic quantitative method of assessing the desirability of government ... policies when it is important to take the long view of future effects and a broad view of possible side-effects") (internal citations omitted).

SUMMARY OF THE ARGUMENT

The Second Circuit's decision misreads § 316(b) and the other technology-based provisions of the Clean Water Act, ignores the legislative history, and misapplies this Court's precedents to reach a conclusion that is inconsistent with § 316(b)'s mandate.

Section 316(b) does not forbid EPA to compare costs and benefits on either a national or site-specific basis. As the Entergy/PSEG Brief demonstrates, § 316(b), read both alone and within the broader

structure of the Act, clearly permits EPA to weigh costs and benefits in regulating cooling water intake structures. UWAG agrees with and adopts the arguments presented by Entergy and PSEG.

At the very least, however, § 316(b) is ambiguous as to EPA's authority to weigh costs and benefits in setting national standards or in making site-specific BTA determinations. Other than requiring EPA to focus on the "location, design, construction, and capacity" of cooling water intake structures, and to "minimize" those "environmental impacts" that are "adverse," § 316(b) is silent on the factors to be considered and how they should be considered. EPA's interpretation of § 316(b) was entirely reasonable and thus was entitled to deference under *Chevron*. The Second Circuit's decision gave it none; indeed, the court makes almost no mention of EPA's interpretation. Instead, the court's decision upsets 30 years of Agency interpretation and precedent and denies EPA the deference to which it is due when interpreting a statute the Agency is charged with administering.

The Second Circuit's cost-benefit decision places a harmful and artificial limit on EPA's thinking. As the discussion above of EPA's findings shows, the Agency knew that saving some fish is more important than saving others; that installing some equipment to save fish, in some places, will harm the environment or at least have no worthwhile overall effect; and that some equipment that saves fish will also reduce electric supply and increase air pollution. All these are relevant to "best

technology available" for "minimizing adverse environmental impact."

Yet the reasoning underlying the Second Circuit's decision suggests that EPA is inappropriately restricted from thinking about these things in certain ways. It may not consider, for example, how intake technologies increase air pollution, increase undesirable fish, or harm electric supply *if* considering them would involve translating those costs and benefits into economic terms for comparison. This restriction on an agency's deliberative process is irrational. The various "factors" (all of which can be thought of as either "costs" or "benefits") must assuredly be compared to one another at some point, and cost-benefit analysis is one tool for making such comparisons. Is it not a requirement of rational decision-making that EPA consider, for example, that a large increase in air pollution would produce only a minimal improvement in a fish population? And is not that comparing "costs" to "benefits"?

It is inconceivable that Congress intended to impose irrational limits on EPA's thinking, especially where such limits would undercut the statutory objective (minimizing adverse environmental impact). If that is what Congress intended, there would be clear evidence of it in the statute or legislative history. But there is none.

ARGUMENT

Judicial review of an agency's interpretation of a statute that the agency is charged with administering proceeds under the familiar two-step procedure articulated in *Chevron*. At step one of a *Chevron* analysis, reviewing courts must examine the text of the statute and ask "whether Congress has directly spoken to the precise question at issue." *Chevron*, 467 U.S. at 842. If it has, then the "inquiry is at an end" and the agency must follow Congress's command. *See FDA v. Brown & Williamson Tobacco Corp.*, 529 U.S. 120, 132 (2000).

If a court determines that the statute is ambiguous, however, the inquiry moves to step two of *Chevron*'s test. At step two, a court must defer to the agency's interpretation of an ambiguous provision so long as it represents "a reasonable policy choice for the agency to make," *Chevron*, 467 U.S. at 845, and is thus a "permissible" construction of the statute. *Id.* at 843. This can be framed as an aspect of statutory interpretation and of the requirement that agencies engage in reasoned decision-making. *Compare NationsBank of N.C. v. Variable Annuity Life Ins. Co.*, 513 U.S. 251, 257 (1995) (citing *Chevron*, 467 U.S. at 844) ("If the administrator's reading fills a gap or defines a term in a way that is reasonable in light of the legislature's revealed design, we give the administrator's judgment 'controlling weight.'") *with Smiley v. Citibank (S.D.), N.A.*, 517 U.S. 735, 741 (1996) (citing *Chevron*, 467 U.S. at 844) ("In its logic, at least, the line [drawn by

the agency] is not 'arbitrary [or] capricious,' and thereby disentitled to deference under *Chevron*.").

Review at step two is deferential. The court may not "simply impose its own construction on the statute, as would be necessary in the absence of an administrative interpretation." *Chevron*, 467 U.S. at 843. It must affirm an agency's interpretation even if it is not the best interpretation of a statute or the interpretation that the court would have devised. *See id.* at 843 n.11. The rationale for agency deference is clear. As this Court has explained, *Chevron* is based upon "a presumption that Congress, when it left ambiguity in a statute meant for implementation by an agency, understood that the ambiguity would be resolved, first and foremost, by the agency, and desired the agency (rather than the courts) to possess whatever degree of discretion the ambiguity allows." *Smiley v. Citibank*, 517 U.S. at 740-41 (citing *Chevron*, 467 U.S. at 843-44).

Under *Chevron*, deference to reasoned agency decision-making is particularly appropriate where the statute at issue is highly technical or complex. *Chevron*, 467 U.S. at 865 (1984); *see also Nat'l Cable & Telecomms. Ass'n* v. *Brand X Internet Servs.*, 545 U.S. 967, 1002-03 (2005); *Barnhart* v. *Walton*, 535 U.S. 212, 222 (2002); *Pauley* v. *BethEnergy Mines*, 501 U.S. 680, 697 (1991). As this Court has explained, the Clean Water Act is exactly the type of "very complex statute" for which *Chevron* deference is particularly appropriate. *See Chemical Mfrs. Ass'n* v. *NRDC*, 470 U.S. 116, 125 (1985). Accordingly, courts regularly defer to the EPA's expertise in

construing silent or ambiguous provisions of the CWA. *See, e.g.*, *Arkansas* v. *Oklahoma*, 503 U.S. 91, 112-14 (1992) (reversing Court of Appeals decision to invalidate Clean Water Act permit issued by EPA because that court failed to defer to EPA's interpretation of its water quality regulation and therefore "made a policy choice that it was not authorized to make"); *United States* v. *Pozsgai*, 999 F.2d 719, 729 (3d Cir. 1993) (giving deference to Army Corps of Engineers interpretation of Clean Water Act because, "[l]ike the Clean Air Act in *Chevron*, the Clean Water Act addresses a scientifically complicated subject, and has an intricate regulatory structure").

I. EPA's Interpretation of § 316(b) as Authorizing Cost-Benefit Analysis Is Entitled to Deference

Reviewing the language of § 316(b) itself, and the full statutory context, the only conclusion that can be drawn is that, for the reasons given by Entergy and PSEG, the provision unambiguously permits EPA to weigh costs and benefits. If this Court concludes otherwise, however, then, at the very least § 316(b) is silent, and therefore ambiguous, on the issue; it certainly does not unambiguously forbid the Agency to weigh costs and benefits. EPA's interpretation of § 316(b) to authorize cost-benefit analysis both at the national and site-specific level is entirely consistent with a reasonable, common sense interpretation of § 316(b), and the Second Circuit erred in not deferring to the Agency's interpretation.

A. The Second Circuit's Interpretation Is Not Dictated by Statutory Language or Precedent

1. The Wording of Section 316(b) Does Not Foreclose Cost-Benefit Analysis

As the Second Circuit itself recognized in *Riverkeeper I*, the paucity of legislative history, combined with the brevity of the section itself, "counsels against imputing much specific intent to Congress beyond the section's words themselves." *Riverkeeper I* at 187 n.12. Thus, "[t]o the extent the provision is silent on issues to which other sections speak" (such as EPA's authority to consider costs and benefits under § 316(b), "we hesitate to draw the negative inference that the brevity of section 316(b) reflects an intention to limit the EPA's authority rather than a desire to delegate significant rulemaking authority to the Agency." *Id.*

If such a prohibition exists, then, it must be apparent from the terms Congress used in § 316(b). That those terms do *not* unambiguously prohibit balancing costs and benefits finds support in the same arguments presented by Entergy and PSEG demonstrating why § 316(b) is best read as unambiguously *authorizing* cost-benefit balancing. In Section II.A of their Argument, Petitioners Entergy and PSEG discuss in detail the ordinary meaning of "best," "available," "minimize," and "adverse environmental impact." As that analysis demonstrates, the ordinary meaning of all these

terms, individually and collectively, is entirely consistent with EPA's use of cost-benefit analysis in selecting BTA at the national level and at specific sites.

Focusing further on the phrase "minimize adverse environmental impact," nothing in the statute suggests, as the Second Circuit assumed, that Congress intended a single-minded focus on reducing impingement and entrainment as much as physically possible. *See* Pet. App. 26a (assuming "best" means "most effective" or "optimally best performing" at reducing impingement mortality and entrainment).

That EPA chose impingement mortality and entrainment as a measure of "adverse environmental impact" does not mean that it forfeited the right to weigh other factors in deciding when "adverse environmental impact" in the broader sense occurs and when it is minimized. As EPA was careful to explain, its decision to set national standards did not limit its discretion to decide that environmental impacts are "minimized" at something less than those standards.[20] Pet. App. 356a (69 Fed. Reg. 41,627).

---

[20] Indeed, in the Phase I rule, EPA adopted a regulatory definition of "minimize" that accommodates cost-benefit balancing to decide what level of additional control is "reasonably possible." *See* 40 C.F.R.§ 125.83 (defining "minimize" for purposes of the Phase I rule as meaning "reduce

(continued...)

Had the Second Circuit examined the phrase "adverse environmental impact," it would have found no bar to EPA's interpretation. "Adverse" commonly means "contrary to one's interests or welfare; harmful or unfavorable." *American Heritage Dictionary of the English Language* (4th ed. 2000). "Environmental" means "relating to or being concerned with the ecological impact of altering the environment." *Id.* And definitions of "impact" include "the force or impression of one thing on another: a significant or major effect." *Merriam-Webster's Collegiate Dictionary* (10th ed. 1996). Collectively, they suggest Congress's intent to reduce significant effects that have ecological impact and that are contrary to the interests of the "environment" writ large.

It is eminently reasonable to use cost-benefit comparisons to decide when such effects have occurred and at what point they are "minimized." In short, the objective of § 316(b) is not so narrow that it suggests a Congressional intent to forbid cost-benefit comparisons, as the Second Circuit assumed. Indeed, §§ 301, 304, and 306 are designed to make progress toward the far more precise and demanding goal of "eliminating pollutant discharges," but, as explained below, even those provisions permit cost-benefit comparisons.

---

to the smallest amount or degree reasonably possible"). This provision was not challenged and remains in effect today.

2. The Second Circuit's Reliance on *Crushed Stone* Was Misplaced

In finding an unambiguous intent to prohibit cost-benefit analysis, the Second Circuit largely ignored the specific requirements of § 316(b). Instead, it drew a strict analogy between § 316(b) and the BAT ("best available technology" economically achievable) and BADT ("best available demonstrated control technology") requirements of §§ 301(b)(2) and 306(b)(1)(B). Having drawn this analogy, it misinterpreted this Court's decision in *EPA v. Nat'l Crushed Stone*, 449 U.S. 64 (1980), which construed those provisions, as "strongly suggest[ing] that cost-benefit analysis is no longer permitted under those sections...." Pet. App. 23a.

Nothing in *Crushed Stone* supports the Second Circuit's rejection of EPA's interpretation of § 316(b). There, this Court examined whether the Clean Water Act *requires* EPA to provide a variance from BPT ("best practicable control technology" currently available) limits that prove too expensive for a facility to afford. The Fourth Circuit had ruled that EPA was required to provide such a variance to account for individual affordability, because § 301(c), the BAT variance provision, required it.

This Court disagreed, holding that EPA was not required to provide a BPT variance based on affordability. The Court reasoned that because the statute *requires* EPA to weigh costs and benefits when setting BPT requirements, those requirements

embodied EPA's judgment that the costs, including some individual closures of clearly deficient plants, were necessary to make reasonable further progress and thus were worth the benefits.

In reaching this conclusion, this Court noted in passing that "[s]imilar directions are given the Administrator for determining effluent reductions attainable from the BAT except that in assessing BAT total cost *is no longer to be considered* in comparison to effluent reduction benefits." *Crushed Stone*, 449 U.S. at 71 (emphasis added). The Court then cited remarks made by Senator Muskie describing the BPT standard and noting that the BAT provision "lists 'cost' as a factor to consider in assessing BAT, although it does not state that costs shall be considered in relation to effluent reduction benefits." *Id.* at 71 n.10 (internal citations omitted). The Second Circuit misread this Court's remark as tantamount to a statement that, in assessing BAT, total cost *may no longer be considered* in relation to effluent reduction benefits. But that is not what the Court said, nor is that how its decision has been read by other courts. *See* Entergy/PSEG Brief, Argument § II.B.1.

The Court simply never considered whether EPA had discretion to weigh costs and benefits in setting BAT where it deemed such consideration appropriate, because that was not the issue before it. Indeed, later in its decision, the Court recognized that the § 301(c) variance provides for exactly that sort of balancing in adjusting BAT requirements on a

site-specific basis. *See Crushed Stone*, 449 U.S. at 77 n.16.

B. The Phase II Rule Embodies the Same Reasonable Policy Choice EPA Has Made for the Past 30 Years

Given that § 316(b) is at least ambiguous on the subject of EPA's authority to weigh costs and benefits, the question presented under step two of *Chevron* is whether EPA's conclusion that such analysis is permitted by the Act is reasonable. It is.

As Entergy and PSEG have shown in their brief, § 316(b), read both alone and within the broader structure of the Act, clearly permits EPA to weigh costs and benefits in regulating cooling water intake structures. The same analysis supports the conclusion that EPA's interpretation is reasonable.

EPA's interpretation here is consistent with the same principles of site-specificity and cost-benefit balancing that the Agency has applied for the past 30 years without challenge by any court or change by Congress. The longevity of EPA's interpretation and its widespread application for so many years warrant special deference, as this Court has recognized. *See, e.g., Alaska Dep't of Envtl. Conservation v. EPA*, 540 U.S. 461, 487 (2004) (the Court "normally accord[s] particular deference to an agency interpretation of 'longstanding' duration"); *Barnhart v. Walton*, 535 U.S. 212, 220 (2002) (quoting *North Haven Bd. of Ed. v. Bell*, 456 U.S. 512, 522 n.12 (1982), recognizing that "well-reasoned views" of an expert

administrator rest on "'a body of experience and informed judgment to which courts and litigants may properly resort for guidance'"); *Bragdon v. Abbott*, 524 U.S. 624, 642 (1998) (quoting *Skidmore v. Swift & Co.*, 323 U.S. 134, 139-40 (1944)).

In developing the Phase II rule, EPA did not write on a blank slate. As discussed above, the Agency adopted a § 316(b) rule in 1976, only to have it remanded on procedural grounds a year later. *See supra* at 15. The 1976 rule, unlike the rule at issue here, made no attempt to set national standards. J.A. 38-49 (41 Fed. Reg. 17,387-90 (Apr. 26, 1976) (cited in Pet. App. 159a-162a (69 Fed. Reg. 41,583-84)). Instead, the 1976 rule required that the best technology available be determined by evaluating the specifics of each plant and its site, including the size and type of waterbody and relative magnitude of flow withdrawn.

The Agency took a broad view of what permit writers ought to consider in determining whether an adverse environmental impact exists and when it is minimized. The number of organisms affected and the potential for population impacts were both factors it said were relevant. J.A. 45 (41 Fed. Reg. 17,389). It explained that, once a permit writer has identified adverse environmental impacts for a given site, its task is to identify economically practicable technologies for the individual facility and to select from among them the most effective at minimizing the adverse environmental impacts identified. J.A. 41-42 (41 Fed. Reg. 17,388). Although EPA said that § 316(b) does not *require* permit writers to conduct a

cost-benefit analysis before selecting BTA, it did not suggest that permit writers were forbidden to compare costs and benefits if they chose to when deciding which technologies are the most effective at minimizing adverse environmental impact. *Id.*

The Agency also concluded that closed-cycle cooling systems were not "universally and necessarily the best technology available," finding that the available data did not support requiring their use even for plants on biologically sensitive waters. J.A. 43-44 (41 Fed. Reg. 17,388).

EPA later supplemented its initial § 316(b) rule with draft § 316(b) guidance.[21] Although never finalized, the 1977 draft guidance is important because it has been widely followed by state and federal permit writers, and its principles are reflected in hundreds of individual § 316(b) decisions.

---

[21] The 1977 draft guidance (p. 11) states as follows:

> Adverse aquatic environmental impacts occur whenever there will be entrainment or impingement damage as a result of the operation of a specific cooling water intake structure. The critical question is the magnitude of any adverse impact. The exact point at which adverse aquatic impact occurs at any given plant site or water body segment is highly speculative and can only be estimated on a case-by-case basis by considering the species involved, magnitude of the losses, years of intake operation remaining, ability to reduce losses, etc.

The 1977 draft guidance acknowledges that the "adverse impact" of cooling water intakes is site-specific and directs permit writers to make design, location, construction, and capacity decisions case-by-case. 1977 draft guidance at 4 n.12. It suggests a general process for decision-making, starting with a site-specific study, which is used to determine whether, based on the magnitude of the impact, the facility needs to make changes for minimizing adverse environmental impact. *Id.* at 11-14, discussed at Pet. App. 161a (69 Fed. Reg. 41,584).

Besides the 1977 draft guidance, the Agency issued a variety of decisions and opinions reflecting its interpretation of § 316(b). Most important for this case was the Administrator's decision involving a § 316(b) determination for the Seabrook generating station. *In re Pub. Serv. Co. of N.H. (Seabrook Station, Units 1 and 2)*, 1 E.A.D. 455, 1978 EPA App. LEXIS 17 (1978), *aff'd, Seacoast II*, 597 F.2d at 311. There, the Administrator confirmed that § 316(b), while not requiring a cost-benefit analysis to justify BTA requirements, does not require selecting the technology that most reduces impingement and entrainment mortality, if its cost would be wholly disproportionate to the benefits obtained (that is, the number of organisms spared or the effects of reduced losses on the waterbody). EPA's General Counsel subsequently endorsed the Administrator's determination. *In re Central Hudson Gas & Elec. Corp., et al.* Opinion No. 63, July 29, 1977, 1977 WL 28250 (E.P.A.G.C.) at *9-10 (explaining that it would be "unreasonable to interpret Section 316(b) as requiring use of a technology whose cost is wholly

disproportionate to the environmental benefit to be gained").

In permitting decisions over the past 30 years, EPA and the states have relied on this "wholly disproportionate" test to make § 316(b) decisions. [22] Until now, no court has ever found fault with that approach. On the contrary, the courts have supported it. *Seacoast II*, 597 F.2d at 311; *United States Steel Corp. v. Train*, 556 F.2d 822, 850 (7th Cir. 1977) ("we trust that EPA will conduct a limited cost-benefit analysis" for a steel mill under § 316(b)).

---

[22] *See, e.g., In re Dominion Energy Brayton Point, LLC (formerly USGen New England, Inc.) Brayton Point Station*, NPDES 03-12, 2006 EPA App. LEXIS 9, *87-88, 132-33 (EAB February 1, 2006); *In the Matter of Dynegy Northeast Generation, Inc.* (Danskammer Generating Station), 2006 N.Y. ENV LEXIS 23, *19 (Deputy Commissioner, NY Dep't Envtl. Conservation, May 24, 2006) (describing New York's approach for selecting BTA, including a determination about whether the costs of practicable technologies are wholly disproportionate to the environmental benefits conferred by such measures), appeal dismissed on procedural grounds, *Hudson Riverkeeper Fund v. Orange & Rockland Utils.*, 835 F. Supp. 160, 165-66 (S.D.N.Y. 1993); *Athens Generating Co.*, 2000 WL 33341184 (N.Y. Dep't Envtl. Conservation, June 2, 2000) at *10-11 (applying a "wholly disproportionate" cost-benefit standard, which is met where "the relative costs are unreasonable"); *see also* the cases cited in UWAG's Petition for Writ of Certiorari, No. 07-597 at 21-22 (Nov. 2, 2007).

II. EPA Reasonably Concluded that § 316(b) Permits Site-Specific Cost-Benefit Consideration

The compliance option authorizing alternative standards where justified by site-specific costs and benefits provides for balanced, environmentally protective decision-making. To obtain an alternative standard, the applicant must demonstrate that the costs (which, as noted above, encompass more than just the facility's out-of-pocket costs) are "significantly greater"[23] than all the benefits that would occur if the national standards were met.

The rule requires the permittee to submit qualitative and quantitative information and allows balancing of both. It requires consideration of the benefit of reducing impingement mortality and entrainment not only to commercial and recreational fisheries, but to the ecosystem. And it provides for independent evaluation of uncertainty, which will need to be taken into account in reaching a decision. By its terms, it does not require rigid, mechanistic decision-making based solely on economics. Instead,

---

[23] EPA chose the phrase "significantly greater" (instead of the "wholly disproportionate" test EPA has used in the past, both in guidance and in the Phase I rule) to signal its understanding that existing facilities have less flexibility in selecting locations and technologies, that the rule will affect a much larger portion of the generating capacity, and that a slightly less extreme standard will avoid "economically impracticable impacts on energy prices." 68 Fed. Reg. 13,541 (Mar. 19, 2003).

it allows decision-makers to weigh all the costs against all the benefits and to choose the best option based on local resource management priorities. As the Department of Energy commented, supporting the concept of site-specific requirements using the cost-benefit test, State or regional permit writers, who can appreciate the site-specific nature of any adverse environmental impact, would have the final say on site-specific requirements rather than having the decision-making reside with the federal government. EPA's Response to Comment 181.

By allowing for comparison of all costs and all benefits, the cost-benefit provision affords the rule's only mechanism for testing EPA's assumption that the environmental benefits of reducing impingement mortality and entrainment will outweigh other adverse environmental impacts created by an intake alternative.

The Second Circuit did not say that § 316(b) prohibits case-by-case decision-making *per se*. In fact, in *Riverkeeper I*, the court agreed with EPA that § 316(b) does not require uniform, categorical rulemaking. *See Riverkeeper I* at 203 (finding no textual bar to case-by-case application of § 316(b) and upholding rule requiring such individual decisions for some new facilities). As the court acknowledged, "the Clean Water Act does not forbid the EPA from addressing certain environmental problems on a case-by-case basis, ... when it does not violate the statute's language and is otherwise consistent with Congress's overriding goal of improving the quality of the nation's waters." *Id.*

Other courts have consistently agreed that EPA may implement § 316(b) case by case. *See Hudson Riverkeeper Fund*, 835 F. Supp. at 165; *Appalachian Power Co.*, 566 F.2d at 457 (stating in dicta that "we do not fault EPA for its point source by point source application").

Nevertheless, the Second Circuit invalidated EPA's carefully crafted provision authorizing establishment of site-specific standards based on cost-benefit comparison. Besides relying on its conclusion that § 316(b) does not permit cost-benefit analysis in any case (Pet. App. 57a-58a), the court gave two other reasons.

First, the court concluded that allowing site-specific cost-benefit analysis impermissibly authorizes EPA to consider local water quality conditions (or, for § 316(b) purposes "wildlife levels") – an approach the court said Congress rejected when it established the technology-based program for pollutant control. Pet. App. 58a-59a. Second, it construed the existence of a specific water quality-based variance for heat in § 316(a), and the absence from § 316(b) of a comparable provision, as evidence that Congress intended no consideration of local water quality factors under § 316(b). Pet. App. 59a n.27.

A. Other Clean Water Act Sections Do Not Foreclose Site-Specific Cost-Benefit Analysis Under § 316(b)

By its terms, § 316(b) authorizes, rather than prohibits, consideration of site-specific environmental conditions, including "wildlife levels," in selecting BTA. This is apparent both from Congress's focus on the "location, design, construction, and capacity" of the cooling water intake structure (all of which involve inherently local considerations and trade-offs, particularly for facilities which already exist), and its mandate that EPA require the best technology available for "minimizing *adverse environmental impact.*"

That phrase is indisputably broad enough to authorize EPA to consider what an intake structure's environmental impacts (to the waterbody or any other parts of the environment) are, to evaluate whether they are adverse, and to decide at what point they have been "minimized." To suggest that EPA is barred from allowing federal and state permit writers to make site-specific assessments if necessary to address these factors is wholly implausible.

The Second Circuit did not base its interpretation on the language of § 316(b). Instead, the court relied on case law describing Congress's general dissatisfaction with the purely water quality-based regulatory scheme in place before 1972 and its desire to replace that program with technology-based regulations focused on controlling discharges of

pollutants. Pet. App. 58a-60a, citing *Riverkeeper I* at 189-190 (citing, *inter alia,* the Second Circuit's statement in *Bethlehem Steel Corp. v. EPA*, 538 F.2d 513, 515 (2d Cir. 1976), that Congress intended to "replace or supplement" the water quality standards program with "effluent limitations" as basis for setting aside restoration provisions).

Courts generally have agreed that the language and history of the technology-based requirements for the reduction of pollutant discharges indicate that EPA is not *required* to consider local water quality conditions when setting such controls. But until *Riverkeeper II*, no court had suggested that Congress intended to bar EPA from considering water quality in setting discharge controls. To the contrary, in at least one case, *Nat'l Wildlife Fed'n v. EPA*, 286 F.3d 554 (D.C. Cir. 2002), the circuit court upheld EPA's authority to decline to set categorical limits for color discharged by pulp and paper mills "because the potential for significant ... impacts from color discharges is driven by highly site-specific conditions." *Id.* at 556.

Even if §§ 301, 304, and 306 did forbid consideration of local water quality in setting technology-based discharge limitations, transferring that conclusion to § 316(b) would be an error, given the material differences between § 316(b) and the other provisions.

One of the most obvious differences is between the activity regulated by § 316(b) and activity regulated under the other provisions. Sections 301,

304, and 306 focus on controlling pollutant discharges in order to reduce or eliminate their introduction into the environment. In contrast, § 316(b) focuses on the effects of structures *specifically designed to interact with the environment.* Presumably, Congress chose different language to distinguish between the two programs.

Another obvious difference is between the goal Congress established for the pollutant discharge control program and the objective it set in § 316(b). The former expressly strives to eliminate the discharge of pollutants, without regard to the environmental outcome (subject, of course, to the water quality-based variances for heat and non-conventional/non-toxic pollutants that Congress established in §§ 316(a) and 301(g), respectively). (Section 301(g) is in the appendix to this brief.) By contrast, § 316(b) focuses expressly on the environmental impact of the intake technology, requiring that it be the best for "minimizing adverse environmental impact." That objective is broadly written – quite unlike the narrowly focused goal of "eliminating point source discharges."

Also, the structural choice Congress made in setting § 316(b) apart, along with § 316(a), is significant. Having acknowledged this structural difference in *Riverkeeper I*, the Second Circuit barely mentions it in *Riverkeeper II*. *Compare Riverkeeper I* at 186 *with Riverkeeper II* at 90 (Pet. App. 4a-5a).

B. The Relationship Between § 316(a) and § 316(b) Supports EPA's Use of Site-Specific Cost-Benefit Analysis Under § 316(b)

Contrary to the Second Circuit's reasoning and for the reasons Entergy and PSEG point out, it is implausible to believe that Congress, knowing of the link between thermal discharges and intake structures, would have provided a water quality-based variance for the discharge while ordering the Agency to ignore local water quality conditions in regulating the intake side. *See* Entergy/PSEG Brief, Argument § II.B.2.

EPA considered the relationship between the two provisions and, in the end, concluded that Congress did not intend to make the Agency's authority to minimize adverse environmental impacts under § 316(b) co-extensive with the direction to assure a "balanced, indigenous population of shellfish, fish, and wildlife in and on" the waterbody under § 316(a). Pet. App. 59a, n.27. EPA reasoned that, had Congress intended to compel that result, it would have used parallel language in the two provisions. But this interpretation of § 316(b) does not preclude the Agency from using cost-benefit analysis to decide what is necessary to "minimize adverse environmental impact" in a particular case, taking site-specific factors into account, and the Agency has never suggested it does.

This position is consistent with EPA's long-standing interpretation of § 316(b) and its

relationship to § 316(a). As the Agency's General Counsel explained in 1977:

> Any cooling water intake technology may be imposed under Section 316(b), despite a successful Section 316(a) demonstration, if the cost of the technology is not 'wholly disproportionate' to the environmental gains to be derived from the application of the technology. As a practical matter, though, it would be more difficult for the Agency to show, for example, that the imposition of a $25 million technology under Section 316(b) is not 'wholly disproportionate' to the magnitude of the adverse environmental impact if the discharger has shown under Section 316(a) that the overall impact of a less stringent thermal effluent limitation does not interfere with the protection and propagation of the balanced, indigenous population.

In re Central Hudson, *supra* at 40, 1977 WL 28250 at *9.

EPA's long-standing interpretation harmonizes §§ 316(a) and (b) and is consistent with the plain language of both. It followed this interpretation of the linked provisions in developing the Phase II rule. As this Court has observed repeatedly, a long-standing agency interpretation is

entitled to substantial deference. *See supra* Argument § I.B.

The Second Circuit's reliance on *Russello v. United States*, 464 U.S. 16 (1983), to support its rejection of EPA's interpretation of § 316 is wholly misplaced. Pet. App. 59a n.27. The *Russello* presumption – that the presence of a phrase in one provision and its absence in another reveal Congress's design – is only one indication of meaning. *Kapral v. United States*, 166 F.3d 565, 579 (3d Cir. 1999) (Alito, J., concurring); *United States v. Ressam*, 128 S. Ct. 1858, 1865 (2008) (Breyer, J., dissenting). It grows weaker with each difference in the statutory provisions being examined. *City of Columbus v. Ours Garage & Wrecker Serv.*, 536 U.S. 424, 435-36 (2002).

Here, the obvious difference between the two provisions is that one – § 316(a) – provides for a wholly water quality-based variance from otherwise applicable technology and water-based standards, while § 316(b) requires the use of technology to accomplish a site-specific environmental result. Because the authorization (indeed, the responsibility) to consider water quality is embedded in § 316(b), Congress did not need to provide for a specific water quality-based variance of the type it adopted in § 316(a).

In short, there is no support for any of the rationales offered by the Second Circuit to justify its conclusion that Congress intended to forbid site-specific cost-benefit analysis.

C. The Record Supports EPA's Reading of § 316(b)

To develop the national rule, EPA made a number of assumptions about the extent and impact of the aquatic effects of intake structures at power plants. The Agency understood that some of these were generalizations that might tend to inflate its assessment of the risk posed by impingement and entrainment. The Agency also understood that the amount and type of impingement mortality and entrainment that occurs and the environmental impacts of any losses are strongly influenced by local conditions. As a result, "EPA's comparison of national costs to national benefits may not be applicable to a specific site due to variations in (1) the performance of individual technologies and (2) characteristics of the waterbody in which the intake(s) are located, including resident aquatic biota." Pet. App. 250a (69 Fed. Reg. 41,604).

1. Impingement and Entrainment Vary Widely Based on Site-Specific Conditions

A power plant withdrawing large quantities of cooling water may not impinge many fish if its intake is in an area that is not desirable habitat or where the resident fish do not dwell in the water column. *See, e.g.*, DCN:1-3003-BE at 308 (1974-75 impingement sampling at Big Rock Nuclear Station in Michigan produced only 326 fish weighing 49 pounds total); DCN:1-3021-BE at 207 (1974-75

impingement sampling at Ghent Electric Generation Station recovered only six fish); *see also* Pet. App. 229a-230a, 249a-251a (69 Fed. Reg. 41,599, 41,603-04); UWAG Phase I Comments at 109-12. Similarly, a plant may not entrain many eggs or larvae if the intake is not near a breeding area or if most of the eggs and larvae are not free-floating. Pet. App. 229a-230a (69 Fed. Reg. 41,599).

Impacts vary seasonally as well. For example, eggs and larvae may be present to be entrained during species-specific spawning seasons but not the rest of the year. Pet. App. 293a-294a, 307a (69 Fed. Reg. 41,613, 41,616). As EPA recognized, "because of the location of the intake, the characteristics of a particular waterbody, or the behavioral patterns of the fish or shellfish in that particular waterbody, there may be little or no impingement mortality or entrainment occurring at the site...." Pet. App. 250a-251a (69 Fed. Reg. 41,604).

Equally important, the mere fact that impingement or entrainment occurs does not always signal that the intake has caused "adverse environmental impact."[24]

---

[24] As discussed in this subsection, not all impingement or entrainment is harmful, even to the affected individual. Some organisms are intruders which do more harm than good to the ecosystem. EPA declined to distinguish among species for purposes of setting the national standards. However, it recognized the importance of allowing state resource managers, who may find certain species harmful and thus welcome a

(continued...)

First, as EPA recognized, due to the very high natural mortality to which aquatic organisms are subject, many organisms arrive at the intake structure already dead or moribund. *See, e.g.*, Pet. App. 581a-582a (40 C.F.R. § 125.95(b)(7)(ii)) (requiring that verification monitoring plan for assessing technology performance account for naturally moribund fish and shellfish that enter the structure). The record suggests that this phenomenon is not uncommon.[25] Because special procedures are required to gauge even an adult organism's condition prior to impingement (a task that is difficult or impossible for earlier life stages), EPA's national assessment of intake impacts largely assumed that all losses are caused by the intake.[26]

---

certain amount of "cropping," to set their own priorities. *See, e.g.*, EPA's Response to Comment 4188, J.A. 355; Pet. App. 269a (69 Fed. Reg. 41,608) (cost-benefit alternative provides flexibility comparable to purely site-specific approach); *See* UWAG Phase I Comments 85. *See also* UWAG Phase II Comments 101-03 (providing support for exclusion of invasive species from protection under § 316(b)).

[25] In one analysis of 40 impingement surveys, 70% of the organisms collected were dead before they were impinged. Cherry *et al.*, Effects of Impingement/Entrainment at the Kanawha River Plant, DCN:1-3007-BE at 6. *See also* Potter, Assessment of the Effects of Impingement and Entrainment on the Fish Community of the New River, Virginia, DCN:1-3056-BE at 20 (March 1978) (93.9% of 842 fish collected were dead prior to impingement).

[26] For the very early life stages subject to entrainment, EPA made an effort to factor in the extremely high natural mortality rates those life stages typically experience by

(continued...)

But EPA knew that requiring application of the technology most capable of reducing impingement and entrainment would do nothing to re-animate organisms already dead or dying from natural causes.

Second, the Agency understood that many organisms survive impingement and entrainment unscathed. That is why EPA developed national standards for "impingement mortality" rather than impingement *per se*. Although EPA chose not to do the same for entrainment, it did allow facilities to gauge entrainment survival if they apply for site-specific limits based on cost-benefit balancing. *See supra* n.16.

2. The Availability, Effectiveness, and Cost of Intake Technologies Vary Widely By Site

The availability, effectiveness, and cost of intake technologies that reduce impingement or entrainment, or improve organism survival, also vary with existing site and facility constraints and the biological and hydrological conditions at the site,

---

calculating the number of "equivalent adults" represented by entrainment losses. *See, e.g.*, Pet. App. 171a-172a (69 Fed. Reg. 41,586). EPA assumed, however, that the actual organisms entrained were alive upon arrival and thus would have contributed in some fashion to equivalent adult production but for the intake structure.

as EPA recognized. *See* Pet. App. 247a-252a, 289a-295a (69 Fed. Reg. 41,603-04, 41,612-13). For example, cylindrical wedgewire screens can reduce impingement mortality by 80-95% for fish and shellfish and, if required, reduce entrainment by 60-90% under certain conditions. Pet. App. 245a-246a (69 Fed. Reg. 41,602). However, such screens work best where in-stream flow conditions are sufficient to carry away organisms removed from the screen, so they do not become re-impinged. Pet. App. 529a (40 C.F.R. § 125.99(a)(ii)); *see also* EPA's Response to Comment 979. And barrier nets, which are successful at reducing impingement mortality by 80-90%, are susceptible to damage by strong currents, debris, and icing and thus may be unsuitable for certain sites but very effective at others. EPA, Technical Development Document for the Final Section 316(b) Phase II Existing Facilities Rule (EPA 821-R-04-007) (DCN:6-0004) (Feb. 12, 2004) ("EPA TDD") 4-14.

Even where site conditions allow a technology to reduce impingement and entrainment, it may create other environmental and social problems. For example, large in-stream screens or nets may create hazards to navigation. Pet. App. 447a-449a (69 Fed. Reg. 41,649-50). Enlarging intake structures to reduce velocity may require construction in shoreline habitat. *Id.* As we have already pointed out, changes to the cooling system often create significant adverse side-effects, most notably energy penalties and increased air emissions. Pet App. 256a-261a (69 Fed. Reg. 41,605-06). In some cases, the thermal discharge from the facility provides unique habitat

for an important species. Curtailing that discharge with a closed-cycle system can have disastrous results for the species in question.[27]

As the environmental impacts of intake technologies vary from site to site, so do the costs. *See, e.g.* EPA TDD, 1-1 to 1-13 (cost estimates for retrofitting wedgewire screens at fossil-fueled plants show 36-fold difference in cost depending on site-specific factors); EPA TDD, Table 2-21 and 2-22 (showing 115-fold difference in cost of retrofitting fine mesh traveling screens with fish returns, depending on site-specific factors). The capital, energy, and operating and maintenance costs of retrofitting closed-cycle cooling, which is particularly costly and difficult for existing facilities, is highly dependent on site-specific factors. Pet. App. 256a (69 Fed. Reg. 41,605) (capital costs for cooling towers even for *new* plants would range from about $170,000 to $12.6 million per plant annualized, depending on flow); 68 Fed. Reg. 13,527 (Mar. 19, 2003) (citing DOE study showing site-specificity of retrofit costs). Moreover, EPA was concerned that the small sample of plants it used to estimate retrofit

---

[27] *See, e.g.*, Fla. Dept. Industrial Wastewater Comments on Phase II Rule 2 (Aug. 7, 2002), J.A. 262-63 (describing adverse impacts of thermal discharge curtailment on endangered manatees, which seek out thermally enriched waters as habitat); *see also* FPL Comments on the Proposed 316(b) Rule for Existing Sources, Public Comment 1.051 (Aug. 7, 2002) 6.

costs was unlikely to capture the full cost. Pet. App. 259a (69 Fed. Reg. 41,605-06).

In sum, faced with the Herculean task of developing national standards to address the complex, interlocking, and inherently local environmental and technical issues presented by § 316(b), the Agency considered a number of approaches. It chose the approach that offered some measure of uniformity, while also providing to facilities and regulators the safety valve of considering the site-specific factors that drive both the "adverse environmental impact" likely to occur and the availability, performance, and cost of intake technologies for reducing that impact.

CONCLUSION

In the broadest sense, cost-benefit balancing is a fundamental tool of logical decision-making. It allows the decisionmaker to use all the available information to make the most reasonable choice for achieving an objective. Courts, governments, markets, industries, and ordinary people rely on it constantly, whether explicitly or implicitly, to make rational decisions.

Now, for the first time, the Second Circuit has held that cost-benefit analysis is forbidden even where it is consistent with achieving a statutory objective and the statute does not expressly prohibit it. This is folly. The court was wrong to substitute its own highly selective interpretation for EPA's eminently reasonable one.

This Court should hold that EPA's consideration of costs and benefits in deciding what is "best technology available" on a national basis and establishing performance standards based thereon was within its statutory authority. Likewise, this Court should hold that EPA was within its authority in permitting site-specific determinations of "best technology available" when the cost of meeting national standards would be significantly greater than the benefits.

The portions of the Second Circuit's judgment remanding the national performance standards and site-specific cost-benefit provisions of the Phase II Rule (which are described in greater detail in Section IV of the Entergy/PSEG Brief) should be reversed.

Respectfully submitted,

KRISTY A. N. BULLEIT
Counsel of Record
HUNTON & WILLIAMS LLP
1900 K STREET, N.W.
WASHINGTON, DC 20006-1109
(202) 955-1547

Counsel for Petitioner

JULY 14, 2008